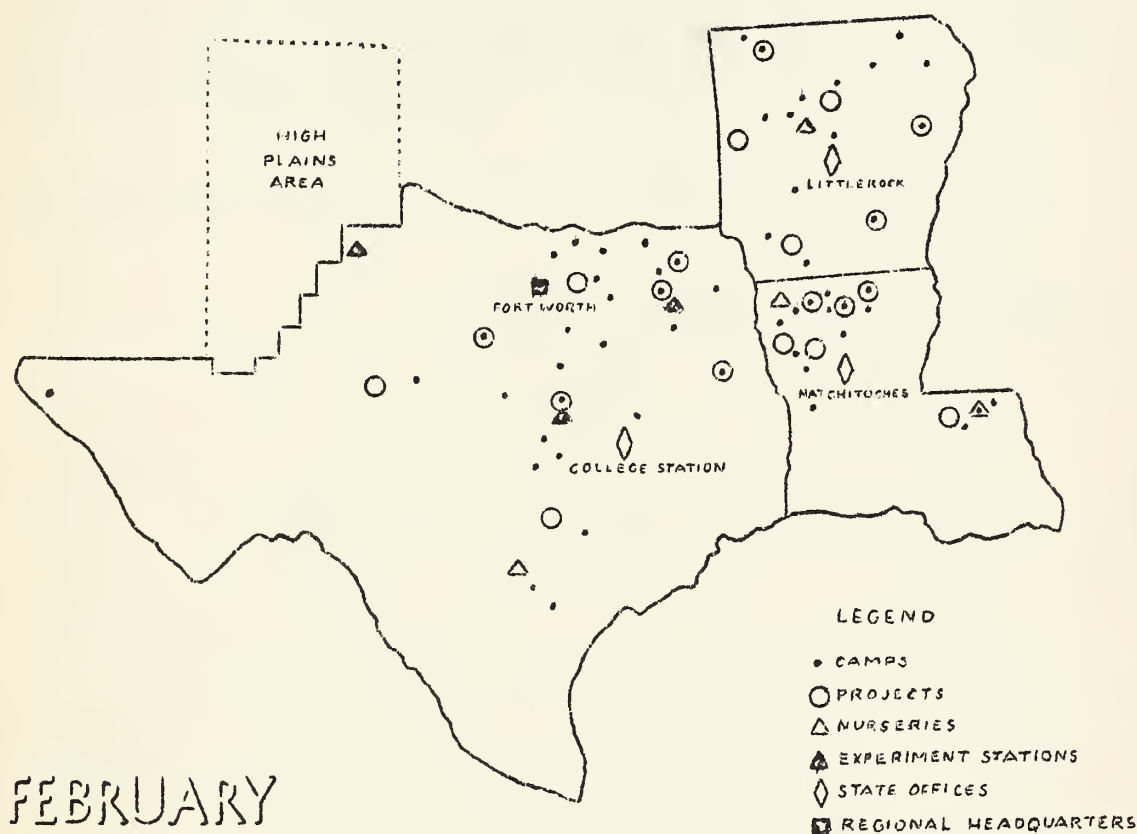


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SOIL
CONSERVATION SERVICE

NEWS



REGION 4
COMPRISING STATES OF LOUISIANA,
ARKANSAS, AND TEXAS EXCEPT
HIGH PLAINS AREA

WHAT IS PASTURE WORTH?

By

E. A. Hodson,
Regional Agronomist

From the standpoint of proper land use and erosion control on steep or eroded land, where cultivated crops cannot be profitably grown, pasture development becomes one of the most important phases of the coordinated soil and moisture conservation program of the Service. Protection of acres too steep for profitable cultivation by pasture grasses is not only essential from an erosion control angle, but the dedication of such acres to pasture also furnishes a use for what would otherwise be unprofitable land on the farm. Thus, pasture development becomes a very important part of the erosion control program on practically every cooperator's farm in Region 4.

The following table shows the acreage in permanent pasture on co-operator farms before and after the cooperative agreement was made:

	Acreage in Permanent Pasture before agreement	Acreage in Permanent Pasture after agreement
Arkansas	17,631	27,230
Louisiana	13,122	16,186
Texas	34,300	43,366
TOTAL	65,053	86,782

The money value of the returns that may be secured from a good pasture is high enough to justify the farmer in planning definitely to carry on a pasture improvement program by mowing weeds, replanting areas with poor stands, fertilizing and controlled grazing.

R. H. Lust in Louisiana Experiment Station Circular No. 15, says: "Good pastures furnish cheaper food than any other farm crop. The average yearly value per cow on dry feed replaced by pasture at Baton Rouge was \$34.54 for 1929-1935. The feed cost of butterfat was 13 cents per pound less on pasture than it was in winter".

The Bureau of Dairy Industry, U. S. Dept. of Agriculture in Clip Sheet 949 gives a comparison of the value of grass and some other feeds: "Tabulation of cost of growing various crops, gathered from 16 states showed grasses cost the farmer only 65 cents for each 100 pounds of digestible nutrient, compared to 83 cents for alfalfa, 97 cents for clover hay, and \$1.54 for corn silage. Cuts (grain) are at the other extreme with a cost of \$2.02.

The Fruit and Truck Branch Experiment Station, Hope, Arkansas, has conducted some pasture experiments using Bermuda grass supplemented with bur clover, hop clover, white clover, lespedeza, and Dallis grass and reports the following:

"The gain in weight of beef cattle for 1933, 1934 and 1935 averaged 242 pounds per acre. (On the pasture plots referred to above). This figured at 4 cents per pound for beef gives an annual acre return of \$9.68. The carrying capacity was at the rate of $1\frac{1}{2}$ animals per acre."

On the Texas Agricultural Experiment Station at Spur Station reporting on pasture improvement work the following results with Buffalo grass pasture have been obtained:

A forty-one acre block of land in 1936 provided 3,395 steer days, 1,718 milk cow days and 20 mule days of grazing. A total of 15,113 stock days on the pasture. This is an average of 2.92 acres per head of live-stock per year. The steers made a total gain of 4,888 pounds on pasture which shows a return of \$293.28 when beef is figured at 6 cents per pound of gain on the return from the steers on pasture was \$7.15 per acre.

These records show that the pasture can be made a very profitable part of the farm. A good pasture may be expected to give as high or higher return on the money invested in its development and management as any other crop on the farm.

RELATIVE COST AND EFFECTIVENESS OF DIFFERENT METHODS OF TERRACE OUTLET CONTROL

By

Howard Matson,
Regional Engineer.

(SODDED AND STRUCTURALLY PROTECTED CHANNELS)

Continued from January issue.

Sodded Channels. When it has been determined that individual outlets or meadow outlet strips are impractical in a particular situation, consideration should be given to the use of a sodded channel in sections where sod may be satisfactorily established and where it will provide adequate year-round protection. Sodded channels should be so located as to provide for maximum utilization and to require a minimum of maintenance. This may be accomplished by fencing the channel and connecting it to a pasture by means of a gate, so that the channel may be grazed except during rainy weather or long dry periods. Mowing twice a year will then be sufficient to control sprouts and woods.

Where a sodded channel must provide immediate outlet protection and the supply of sod is plentiful and readily accessible, solid sodding is almost as cheap as strip sodding and has the advantage of not requiring repairs. When used on grades exceeding 4 to 5 percent, strip sodding usually requires so much repair as to be unsatisfactory. Generous fertilization, preferably with barnyard manure, is essential where rapid establishment of sod is needed. In the case of a farmer carrying out a soil conservation program on his own farm, the channel should be excavated and sod established economically by fertilization and seeding or spot sodding. The terraces should not be built until coverage is obtained.

Sodded channels in the South are providing effective protection for drainage areas in excess of 100 acres, and the practical limits of use have not yet been satisfactorily established. Several different cross-sections are being tried in an effort to determine the most satisfactory for various conditions. In many instances the shape is largely determined by the grade of the channel, if the designed maximum velocity is kept uniform. It is general practice in Region 4 to design channels for a maximum velocity of 8 feet per second for expected run-off of 10 year frequency. Rains of from 9 to more than 14 inches in one day, with intensities reaching 12 inches per hour for 5 minute duration, have already been experienced on Texas project and camp areas. The resulting run-off produced velocities exceeding 10 feet per second in sodded channels without damage.

The cost of excavating a channel and solid-sodding it should not exceed ten dollars per protected acre, and should be much less where a plentiful supply of sod is available close by. In the Gulf Coastal Plain soils region most projects are able to excavate and sod a channel for 15 to 20 cents a square yard, including fertilization, where barnyard manure is furnished by the cooperator. Spreaders are not used, because they do not serve any useful purpose and tend to create overfalls.

Structurally-protected Channels. In Region 4 the use of channels protected by permanent structures is chiefly confined to the blackland belt in central Texas. Terraced watersheds in this section are usually larger than in any other part of the region, and because of the absence of woodland and the scarcity of pasture areas there are few opportunities for individual outlets. Meadows may be readily developed by seeding little and big bluestem, however, and on land covered by recent agreements probably 75 percent of the terraced area will be protected by meadow outlet strips and sodded channels. In the sandy land sections of the region a number of projects and camps have built no permanent structures, using vegetative protection entirely.

Permanent structures used for terrace-outlet control have included masonry and concrete spreaders without aprons, masonry and formed concrete check dams, formless concrete check dams, concrete bag dams, concrete block and brick check dams, and a few of miscellaneous other types. The formed concrete and masonry check dams have been most common, although a large number of the formless concrete type have been used. Although in Region 4 there have been many washouts around headwall extension in the blackland on account of the earth's cracking away from the structures, only 7 actual failures of the 11,500 permanent structures have occurred.

The apron on a permanent check dam is made longer than the total height of the structure, and no baffle or lip wall is used, the top of the apron being flush with the bed of the channel below. This reduces the amount of excavation required, and tends to eliminate the under cutting which frequently occurs when a lip wall is used.

The cost of excavating channels and building permanent structures should not exceed fifteen to eighteen dollars per terraced acre. Unit costs on placed formed concrete ordinarily range from fifteen to twenty dollars per cubic yard. The design of a three-hinged arch dam which has been recently developed seems to afford possibilities of cutting the cost of permanent structures almost in half. In this design the arch slabs are precast, the wing walls and head walls above ground are built of precast blocks, and the apron slab is poured in place. This eliminates all forming in the field, and reduces the amount of materials required. It will not be recommended for general use until trial installations prove successful.

The economics of the terracing and terrace-outlet control program is a matter of concern, especially to those of us who are working in areas of low land values, and is of sufficient importance to justify careful study. In some cases an amount greatly in excess of the value of the land has been spent in such work, on the premise that the prevention of the destruction of the land is sufficient justification. Where it is necessary to spend more than the appraised value of the land to terrace it and establish outlet control, the land is usually so badly eroded or its fertility is so low that it cannot be farmed profitably. Would not retirement to pasture or woodland be a more economical means of preventing its destruction, and constitute better land utilization as well? It is hoped that reliable criteria may be developed to aid us in determining the point of marginal utility for terracing. In the meantime we are finding that vegetative outlet control is undoubtedly the most economical and practical means at our disposal, and that its applicability may be greatly widened by the exercise of engineering principles and native ingenuity.

WILDLIFE CONSERVATION IMPORTANT

"There are more than 50 species of birds that have actual 'hard cash' value for farmers", says Mabel Walker in an article in February Capper's Farmer. "The widespread damage done by grasshoppers during the summer of 1936 is evidence that man needs the aid of insect eating birds as well as the skillful use of poison sprays. On the average there are about two birds to the acre in the United States, each having an estimated value of 10 cents in preventing insect damage -- a figure too low, but used to insure a safe average-- which totals more than \$400,000,000 saved. Conservation movements and studies made by the U. S. Department of Agriculture have revealed this cash value of birds which the farmer might increase with little expense.

".... Insects if left unmolested, multiply with great speed. A single pair of Colorado potato beetles, if allowed to increase without being molested, would in one season have a progeny of over 60 million. Thirteen generations of plant lice have been observed in one season, each female producing an

average of 100 young, which at the end of the last generation would total 10 sextillion. The gipsy moth, if undisturbed, would be numerous enough in eight years to devour all the foliage in the United States, according to studies made by the Biological Survey.

"The food habits of the 50 birds having the greatest economic value, identifies as first in the list the bluebirds, robins, woodpeckers, wrens, titmice, sparrows, meadow-larks, quail and bluejays, the personal sentiment may cause a difference in one's values....."

GRASSES GREEN IN WINTER

By

Simon E. Wolff and Dennis E. Griffith

The following grasses act as winter annuals in parts of Region 4:

Rescue grass (*Bromus catharticus*)
Choss or cheat (*Bromus secalinus*)
Little barley (*Hordeum pusillum*)
Annual bluegrass (*Poa annua*)
Southern canary grass (*Phalaris caroliniana*)

A few other forms and species of *Bromus*, annuals and weak perennials, may be found in scattered localities in different parts of the region. Among these are Japanese Choss (*B. Japonicus*), downy choss (*B. tectorum*), *B. marginatus*, *B. purgans*, *B. tomentosus*, *B. rigidus*, *B. sterilis*, and *B. latiglumis*.

Rescue grass, during moist cool years, becomes perennial and under these conditions the crown and roots survive summer conditions. Where summer soil and air temperatures are high, choss and rescue grass propagate entirely by seeds, which ripen in May and June and germinate from September to March. Rescue grass is well distributed in Texas for an introduced grass but is rather rare in Louisiana and Arkansas. Choss is found in scattered localities throughout the region. Both furnish valuable forage during the winter and spring months, and where found in dense stands on bermuda and other turf grass pastures may tend to delay the early spring growth of the permanent grasses.

Little barley and annual bluegrass are strictly winter annuals of minor importance as grazing plants due to their sparse and low type of growth. Both are common in lawns and along roadsides.

Southern canary grass does not make much growth until early spring. It is always found in low places or where extra moisture collects.

TO ALL SOIL CONSERVATION COOPERATORS

By

A. B. Ford, County Agent
Nacogdoches, Texas

All of us who have lived 30 years or more know that we live in a very rapidly changing world, and most of the changes emphasize the fact that this is an age of the survival of the fittest; and the fittest among farmers is the man who uses his head as well as his hands. It is a pleasure to keep pace with the times if one be endowed with the spirit of progressiveness and a willingness to work with his neighbors for everything that is best for his community, for his family, and his farm; but, if one changes his program only when forced by necessity, such change becomes only a burdensome adjustment that probably will be disappointing because of the presence of a feeling of resentment.

Please allow me to pause here to congratulate you men on your manner of cooperating with the Soil Conservation Service, and to say that the writer wishes that every farmer in Nacogdoches County could have had the same opportunity that knocks at your door. You have saved your farms, enhanced their value, and guaranteed to future generations good soil from which to earn a living. But, the writer believes our Creator is not satisfied with any effort less than our best, and with the greatly improved physical condition of your farms, it seems that the stage is now set for your best effort, so let me ask you this question: What next? We have heard many definitions of an educated man. The one the writer likes best says that, "An educated man is one that knows what to do next and how to do it".

You deserve the best, if you contribute your best efforts to the task at hand.

Nacogdoches, Texas Project

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PLANTING GRASS SEED

The planting of pasture grass seed should be far enough in advance of spring wood growth to eliminate excessive competition between weeds and seedling grass plants. To accomplish this aim, seed should be planted in February or early March.

Experiments have proved the value of a well prepared seed bed. Co-operators with areas to be over-seeded should take advantage of the present moisture conditions in preparing the soil and planting the seed. At the same time a well planned system of grazing that will lend adequate protection to seeded areas during early growth should be considered in this year's cropping plan.

San Angelo, Texas Project

QUESTIONS FOR THE COOPERATOR

1. Am I entirely familiar with the Plan of Conservation for my farm?
2. If not, how best may I become familiar with this plan?
(If you are not familiar with your plan, contact the Service at once in order that you may be able to have a clear understanding of what your obligations consist.)
3. Do I have wire and posts on the ground for the construction of fence?
4. Do I have available plenty of good sod for use in sodding operations on my farm?
5. Have I taken any steps to poison Gophers since the Service poisoned last year?
6. Is there a phase of maintenance work that needs to be done at this time? This applies especially to terrace breaks and strips of sod that may have been cut or lost in the recent heavy rains.

If each cooperator will make a determined effort to have these and other things that may be necessary in readiness, the work of the Service will be far more effective and efficient on your farm. Think them over; talk them over; and be ready!

Mt. Pleasant, Texas Project

EROSION CONTROL PRACTICES PROVE EFFECTIVENESS IN

RETARDING FLOODS

A very definite example of what a complete soil conservation program will do to help control the rapid flow of water from a farm to the creek and thence to the river, which causes an increase in the already overflowing waters, is found on the farm of J. B. Beard, a cooperator with the Soil Conservation Service, ECW Camp located six miles south of Hope on Highway No. 29.

Late last summer a heavy rain, which lasted about thirty minutes, caused the water from a field on the south side of Mr. Beard's farm to flow rapidly across his pasture and on to the highway, inundating it to a depth of about twelve inches. Water also flowed over a bridge across the camp road near the highway.

Since the occurrence of this summer shower a complete system of terraces and strip cropping has been applied on the Beard farm and the flow of water has been noticed by several people of the community as well as the camp personnel.

Records for the first twenty-four days of January, 1937, show more than thirteen inches of rainfall. And at no time since the terraces and strip crops have been completed on the Beard farm has the water gone over the bridge or road mentioned.

Hepe, Arkansas Project

FARMER'S PARTICIPATION

Admitting the farmer is never without something to do, there are periods during the year that he feels like the merchant after the Christmas rush is over. An ideal time to take inventory, prepare for the coming planting season and, to many land owners in the Grand Cano Creek area, time to read and study their agreement.

Just how many little jobs, what part of the coming year's work can he do now, how much time will be required to carry out his part of the soil conservation agreement?

Sound and practical farm management embodies seasonal distribution of labor, equipment and, let's not forget, the supervisor or owner's time for personal supervision of farm operations. The next best thing to doing a job yourself is being on hand while the other fellow does it.

The success of any cooperative agreement is a result of the efforts of the contracting parties. How much of my share has been completed and what part can be done now to credit toward our agreement? Any member of the Soil Conservation Service will gladly credit you with such participation. It is up to the individual to point out those things in order to assure timely acknowledgement.

Follow the old saying by doing the job this season; clear the way and avoid interruptions during the busy seasons and above all let the fellows know you are cooperating...

Mansfield, Louisiana Project

EDITOR ARKANSAS GAZETTE:

I commend and endorse everything Mr. J. W. Sargent said in Sunday's GAZETTE about floods and the control thereof, for the reason that I know he is right, and I want you to know that I know he is right. Here is how I know he is right--- I have been living here on the east of Beckett Mountain forty-three years between two branches that drain about twenty-five hundred acres. The biggest part of it was in the woods when I came here up to twenty years ago. Then it was nearly all cleared, and put in cultivation. These branches would get so big they would float a steamboat, if it wasn't too big, every time it rained enough to make the ground plow good (about an inch). About that time terracing and contour farming commenced to be advocated by the farm leaders led by T. M. Williams (bless his big hearted soul, I wish I could see him) and it was not but a few years until it took two inches of rain to raise the branches at all, and now since the Soil Conservation Service has got hold of this part of the country with their nearly level terraces, contour farming, strip cropping, and keeping the ground covered with winter catch crops, it takes six inches of rain to float a good sized chunk in these branches, and it has got to fall in three or four hours.

Respectfully,

G. A. MADDOX
Mt. Vernon, Arkansas

UNITED STATES
DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
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